

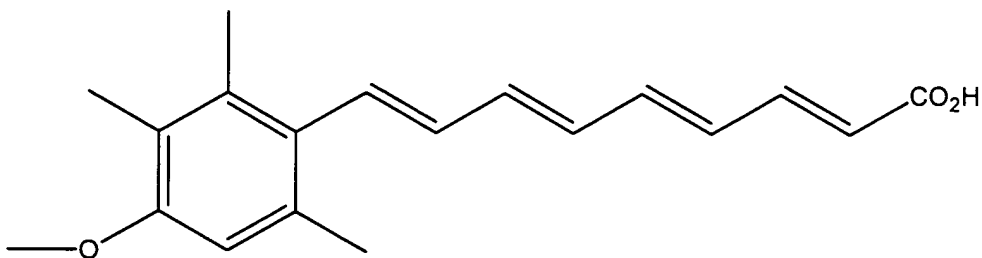
### REMARKS

Claims 1, 22, and 80-90 have been amended. New claim 102 has been added. Support for claim 102 and the claim amendments can be found throughout the specification, including at page 10, line 25 to page 12, line 9, and Example 5 (page 18, line 22 to page 19, line 4). Claims 1-5, 7-8, 12-13, 16-17, 22, 25, 26, and 80-101 are pending.

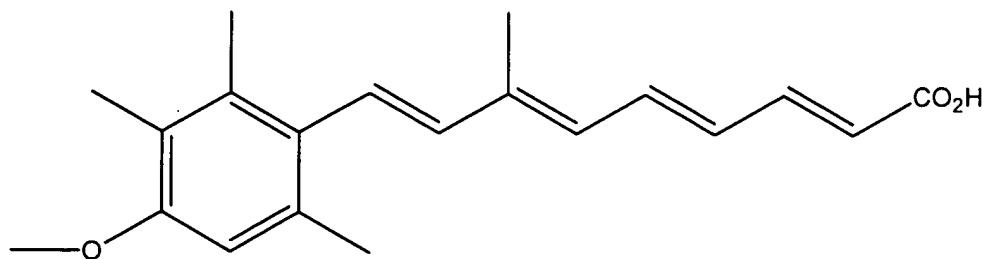
### Rejections under 35 U.S.C. § 102(b)

#### Loev

Claims 1-5, 7-8, 12, 22, 25-26, 80-87, and 89-90 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,621,099 to Loev *et al.* ("Loev"). See Office Action at 2-3. Loev discloses, *inter alia*, the synthesis of the following compounds:



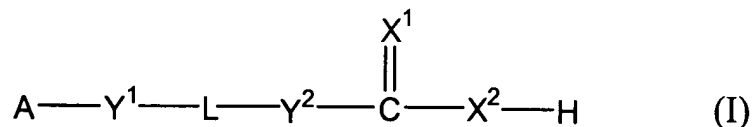
9-(4-Methoxy-2,3,6-trimethylphenyl)-2,4,6,8-nonatetraenoic acid



9-(4-Methoxy-2,3,6-trimethylphenyl)-7-methyl-2,4,6,8-nonatetraenoic acid

See Loev at column 3, lines 7-64. In both of those compounds disclosed in Loev, the cyclic moiety is substituted with four substituents, one of which is a methoxy group.

Applicants have discovered compounds of formula (I):



#### Independent Claims 1 and 80

In compounds of formula (I), as recited in independent claims 1 and 80, A is a cyclic moiety being optionally substituted with 1-3 substituents, each of which is independently selected from the group consisting of alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy, alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, and alkylsulfonyl. As recited in independent claims 1 and 80 of the present application, cyclic moiety A in formula (I) is not substituted with four substituents. Accordingly, Loev does not anticipate independent claims 1 and 80, and the claims that depend therefrom.

#### Independent Claim 22

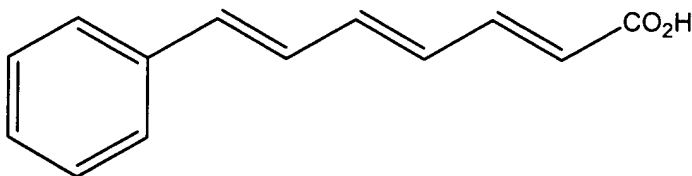
As recited in independent claim 22, A is a cyclic moiety being optionally substituted with alkyl, alkenyl, alkynyl, hydroxylalkyl, or amino. Methoxy is not one of the possible substituents of cyclic moiety A in formula (I) of independent claim 22. Accordingly, Loev does not anticipate independent claim 22 and the claims that depend therefrom.

Applicants respectfully request reconsideration and withdrawal of this rejection.

**Patel**

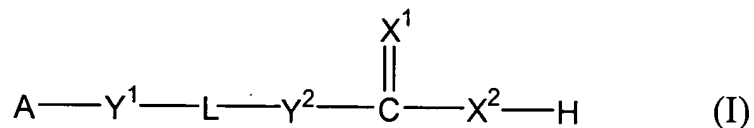
Claims 1-5, 7-8, 12-13, 16-17, 22, 25-26, and 81-101 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Patel et al, Journal of Organic Chemistry, Palladium-Catalyzed Arylation of Conjugated Dienes, 1978, 43(26), pages 5018-5020. See Office Action at 3. Applicants believe that this rejection was erroneously maintained for the reasons discussed below.

Patel discloses the following compound:



In the compound disclosed in Patel, the hydrocarbon chain is unsubstituted.

Applicants have discovered compounds of formula (I):



**Independent Claim 1**

In compounds of formula (I), as recited in independent claim 1, when L contains three double bonds, L is substituted with C<sub>1-4</sub> alkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>1-4</sub> alkoxy, hydroxyl, halo, amino, nitro, cyano, C<sub>3-5</sub> cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6

membered heteroaryl, C<sub>1-4</sub> alkylcarbonyloxy, C<sub>1-4</sub> alkyloxycarbonyl, C<sub>1-4</sub> alkylcarbonyl, or formyl. Although the compound disclosed in Patel contains three double bonds, Patel does not disclose a compound of formula (I) in which L is substituted with C<sub>1-4</sub> alkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>1-4</sub> alkoxy, hydroxyl, halo, amino, nitro, cyano, C<sub>3-5</sub> cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C<sub>1-4</sub> alkylcarbonyloxy, C<sub>1-4</sub> alkyloxycarbonyl, C<sub>1-4</sub> alkylcarbonyl, or formyl. Accordingly, Patel does not anticipate independent claim 1 and the claims that depend therefrom.

#### Independent Claim 22

In compounds of formula (I), as recited in independent claim 22, when L contains three double bonds, L is substituted with C<sub>1-4</sub> alkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>1-4</sub> alkoxy, or amino. See independent claim 22. Again, although the compound disclosed in Patel contains three double bonds, Patel does not disclose a compound of formula (I) in which L is substituted with C<sub>1-4</sub> alkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>1-4</sub> alkoxy, or amino. Accordingly, Patel does not anticipate independent claim 22 and the claims that depend therefrom.

#### Independent Claim 91

In compounds of formula (I), as recited in independent claim 91, L is substituted with C<sub>1-4</sub> alkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>1-4</sub> alkoxy, halo, amino, nitro, cyano, C<sub>3-5</sub> cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C<sub>1-4</sub> alkylcarbonyloxy, C<sub>1-4</sub> alkyloxycarbonyl, C<sub>1-4</sub> alkylcarbonyl, or formyl. Patel does not disclose a compound of formula (I) in which L is substituted with C<sub>1-4</sub> alkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>1-4</sub> alkoxy, halo, amino, nitro, cyano, C<sub>3-5</sub> cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6

membered heteroaryl, C<sub>1-4</sub> alkylcarbonyloxy, C<sub>1-4</sub> alkyloxycarbonyl, C<sub>1-4</sub> alkylcarbonyl, or formyl. Accordingly, Patel does not anticipate independent claim 91 and the claims that depend therefrom.

**Independent Claim 80**

Independent claim 80 is directed to a pharmaceutical composition comprising an effective amount of a compound of formula (I) and a pharmaceutically acceptable carrier. The compound disclosed in Patel is disclosed in the context of palladium-catalyzed arylation of conjugated dienes. Patel does not disclose a pharmaceutical composition comprising a compound of formula (I) and a pharmaceutically effective carrier. Accordingly, Patel does not anticipate claim 80 and the claims that depend therefrom.

Applicants respectfully request reconsideration and withdrawal of these rejections.

**New Claim 102**

In formula (I), as recited in new claim 102, L is a straight C<sub>3-7</sub> hydrocarbon chain optionally containing at least one double bond, at least one triple bond, or at least one double bond and one triple bond; said hydrocarbon chain being optionally substituted with C<sub>1-4</sub> alkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>1-4</sub> alkoxy, hydroxyl, halo, amino, nitro, cyano, C<sub>3-5</sub> cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C<sub>1-4</sub> alkylcarbonyloxy, C<sub>1-4</sub> alkyloxycarbonyl, C<sub>1-4</sub> alkylcarbonyl, or formyl; and further being optionally interrupted by -O-, -N(R<sup>c</sup>)-, -N(R<sup>c</sup>)-C(O)-O-, -O-C(O)-N(R<sup>c</sup>)-, -N(R<sup>c</sup>)-C(O)-N(R<sup>d</sup>)-, or -O-C(O)-O-; each of R<sup>c</sup> and R<sup>d</sup>, independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl; provided that when L contains two or more double bonds, the double bonds are not

adjacent to each other; that when L contains three double bonds, said hydrocarbon chain is further substituted with C<sub>1-4</sub> alkyl, C<sub>2-4</sub> alkenyl, C<sub>2-4</sub> alkynyl, C<sub>1-4</sub> alkoxy, hydroxyl, halo, amino, nitro, cyano, C<sub>3-5</sub> cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C<sub>1-4</sub> alkylcarbonyloxy, C<sub>1-4</sub> alkyloxycarbonyl, C<sub>1-4</sub> alkylcarbonyl, or formyl; and further provided that when L contains zero double bonds, one double bond, or two conjugated double bonds and A is substituted phenyl or unsubstituted aryl, Y<sup>1</sup> is not a bond or CH<sub>2</sub>, and Y<sup>2</sup> is not a bond or CH<sub>2</sub>. Applicants submit that new claim 102 is novel and nonobvious in light of the references cited by the Examiner. Applicants respectfully request entry of new claim 102.

**Conclusion**

Applicants submit that the amendments proposed in this reply place the application in condition for allowance. Applicants respectfully request entry of the proposed amendments, and allowance of all claims.

Please apply any necessary charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 11-19-03



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